

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**BOARD OF PATENT APPEALS AND INTERFERENCES**

Applicant: Burton L. Levin                          Group Art Unit: 2626  
Serial No.: 10/676,273                          Examiner: Albertalli, Brian Louis  
Filed: September 30, 2003                          Customer No.: 55648  
Title: TEXT TO SPEECH CONVERSION SYSTEM

**APPELLANT'S BRIEF**

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July 6, 2009

Mail Stop APPEAL BRIEF-PATENTS  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**BACKGROUND**

This brief is in furtherance of the Notice of Appeal, filed in this case on April 7, 2009.

The fees required under 37. C.F.R. § 41.20(b)(2), and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief comprises these subjects under the headings, and in the order, set forth below:

- I. Real Party in Interest
- II. Related Appeals and Interferences
- III. Status of Claims
- IV. Status of Amendments
- V. Summary of Claimed Subject Matter
- VI. Grounds for Rejection to be Reviewed on Appeal
- VII. Argument
- VIII. Conclusion
- IX. Claims Appendix
- X. Evidence Appendix
- XI. Related Proceedings Appendix

The final page of this brief bears the practitioner's signature.

## **REAL PARTY IN INTEREST**

The real party in interest in this appeal is Sharp Laboratories of America, Inc., assignee of the captioned application.

## **RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences that will directly affect, be directly affected by, or have a bearing on the Board's decision in this appeal.

## **STATUS OF CLAIMS**

### A. TOTAL NUMBER OF CLAIMS IN THE APPLICATION

There are 27 claims currently pending in the application.

### B. STATUS OF ALL CLAIMS

Claims canceled: 21-17

Claims withdrawn: None

Claims pending: 1-20, 28-34

Claims allowed: None

Claims objected to: None

Claims rejected: 1-20, 28-34

### C. CLAIMS ON APPEAL

Claims 28-34 are on appeal.

A copy of the claims on appeal is set forth in the Claims Appendix to this Brief.

## **STATUS OF AMENDMENTS**

No amendment was filed after final rejection.

## **SUMMARY OF CLAIMED SUBJECT MATTER**

The claimed subject matter represented in independent claim 28 is generally directed to a cell phone comprising four elements. This first element is a body portion containing a keypad, an audio receiver, and an audio transmitter. See FIG. 6 and Specification at p. 10 lines 9-12, 19-22. The second element is a digital camera, in the body portion, having an outwardly facing lens. See Specification at p. 10 lines 12-22. The third element is a processor capable of receiving an image

containing a text sequence from the digital camera, distinguishing individual words, and causing the audio transmitter to recite those words in said sequence. See Specification at p. 10 lines 19-22; see also FIG. 5. The fourth element is storage storing a plurality of templates for identifying the layout format of text in an image captured by the digital camera. See Specification at p. 11 line 5 – p. 12 line 5.

### **GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection presented for review are: (1) whether claims 28-31 are unpatentable under 35 U.S.C. §103(a) as being unpatentable over the combination of Nakamisha et al., U.S. Patent No. 6,721,465 (hereinafter Nakamisha) in view of Myers et al., U.S. Patent no. 7,171,046 (hereinafter Myers); (2) whether claim 32 is unpatentable under 35 U.S.C. §103(a) as being unpatentable over the combination of Nakamisha, Myers, and Fujimoto et al., U.S. Patent Application Pub. No. 2002/0031264; (3) whether claim 33 is unpatentable under 35 U.S.C. §103(a) as being unpatentable over the combination of Nakamisha, Myers, and Piehn et al., U.S. Patent Application Pub. No. 2110/0056342 (hereinafter Piehn); and (4) whether claim 34 is unpatentable under 35 U.S.C. §103(a) as being unpatentable over the combination of Nakamisha, Myers, Piehn, and Maes et al., U.S. Patent No. 7,092,046.

### **ARGUMENT**

#### **1. Rejection of Claims 28-31**

Each of the Examiner's respective rejections of claims 28-31 relies upon the premise that all the limitations of independent claim 28, from which the remaining claims depend, are obvious

in view of the combination of Nakamisha and Myers. Independent claim 28 recites the limitation of “storage storing a *plurality* of templates *for identifying* the layout format of text in an image captured by said digital camera.” (emphasis added) The Examiner alleges that this limitation is disclosed at col. 22 lines 49-60 and FIGS 36A-36D. The applicant respectfully submits that the Examiner is incorrect.

Nakamisha discloses an automated mail sorting apparatus in which an image is taken of an envelope, after which the various regions of the envelope are segmented (sender section, destination section, stamp section, etc.) so that the text in each of the sections can be identified and appropriately sorted. In other words, the cited prior art discloses software capable of identifying text arranged according to a *single*, already-known layout format of an envelope. Nakamisha fails to disclose storing a “*plurality*” of templates by which an applicable one may be recognized or identified from a captured image.

The Examiner inappropriately tries to read the term “layout format” on each of the respective regions of a letter, e.g. a region of an envelope that a stamp usually appears at is a “layout format”, a region of an envelope that a destination address typically appears is a “layout format” etc. This interpretation is improper for two reasons. First, it is not consistent with the ordinary usage of the term layout format. A layout format of a page template in a word processing program will provide a map of a page that specifies where the footnotes are located, where a header is located, the margins, etc. The margins, the footnotes, etc. are not individually considered to be “layout formats.” Second, it ignores the limitation of “identifying the layout format *of text* in an image.” (emphasis added). In other words, the claimed cell phone has templates by which the cell phone can distinguish whether the text is laid out, for example, in multiple columns (as in a newspaper) or as a single column (as is this appeal brief), or in other

types of text layout formats. The mail sorting device of Nakamisha is indifferent to the multiple ways in which text is laid out in an envelope, but is instead merely interested in where text of a certain content is likely to appear on the envelope.

Moreover, the Examiner's rejection is inappropriate because the combination with Myers is inappropriate. The Examiner cites Myers as disclosing the limitation of "a processor capable of . . . causing said audio transmitter to recite said individual words in said sequence" and that it would be obvious to one of ordinary skill in the art to have the mail sorting device audibly recite the words that it reads on an envelope. The device of Nakamisha, however, automatically sorts mail by the zip codes that it reads. There is no reason why one of ordinary skill in the art would find such a feature useful in this context.

Therefore, the Examiner's rejection of independent claim 28 is improper and should be reversed. Moreover, because each of the Examiner's rejection of the remaining dependent claims 29-34 being appealed is premised on the propriety of the rejection of claim 28, the rejections of these respective dependent claims should be reversed, as well.

## **2. Rejection of Claim 32**

Claim 32 depends from independent claim 28 and is distinguished over the cited art for the same reasons as is that claim. The applicant therefore respectfully requests that the Examiner's rejection of claim 32 be reversed.

## **3. Rejection of Claim 33**

Claim 33 depends from independent claim 28 and is distinguished over the cited art for the same reasons as is that claim. The applicant therefore respectfully requests that the Examiner's rejection of claim 33 be reversed.

**4. Rejection of Claim 34**

Claim 34 depends from independent claim 28 and is distinguished over the cited art for the same reasons as is that claim. The applicant therefore respectfully requests that the Examiner's rejection of claim 34 be reversed.

**CONCLUSION**

The Examiner's respective rejections of claims 28-34 should be reversed, and the claims should be found patentable.

Respectfully submitted,



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## **CLAIMS APPENDIX**

1. A system for the automated, audible recitation of text arranged in a sequence of one or more words and displayed on a surface defining an area having a height dimension and a width dimension, said area displaying more than one character of said text along each dimension, said system comprising:

(a) a first element capable of distinguishing individual words in said sequence from an image of said surface;

(b) a second element capable of audibly reciting the words distinguished by said first element, in said sequence;

(c) a third element capable of capturing an image of said surface such that all characters of said text within said area are captured simultaneously; and

(d) a fourth element capable of automatically processing said captured image so as to correct, without user interaction, for image distortion in a portion of said image resulting from capturing said image from a non-planar surface having at least a portion not parallel to that of an image sensor in said third element, where said processing separately processes individual portions of said text, so as to facilitate automated character recognition of text in a captured said image, and including the steps of:

(i) converting said individual portions to grayscale;

(ii) applying an edge detection filter to the grayscale-converted said individual portions; and

(iii) thereafter individually rotating said individual portions to align with text respectively adjacent said individual portions.

2. The system of claim 1 where said first element includes a programmable electronic dictionary.
3. The system of claim 1 where said first element includes a spell checker.
4. The system of claim 1 where said image distortion being correctable by said fourth element includes image blur resulting from portions of said surface being located outside a depth of field of said third element.
5. The system of claim 2 where said programmable electronic dictionary includes a phonetic module that automatically recites an estimated pronunciation of a word to a user for verification.
6. The system of claim 1 where said third element includes a processor having software that instructs said third element to capture a test image of at least a portion of said surface, analyze said test image, and based on said analysis, automatically, without user interaction, capture a second image that differs from said test image.
7. The system of claim 6 where said second image corrects for a skewed test image.
8. The system of claim 6 where said second image is more focused than said test image.

9. The system of claim 6 where said second image corrects for a distortion in said test image resulting from capturing text from a curved surface.

10. The system of claim 6 where said second image is a portion of said first image.

11. A system for the automated, audible recitation of text arranged in a sequence of one or more words and displayed on a surface defining an area having a height dimension and a width dimension, said area displaying more than one character of said text along each dimension, said system comprising:

(a) a first element capable of distinguishing individual words in said sequence from an image of said surface:

(b) a second element capable of audibly reciting the words distinguished by said first element, in said sequence;

(c) a third element comprising:

(i) an array of light-sensitive members that each convert light incident on said members to respective electromagnetic signals;

(ii) a lens capable of focusing an image on said array; and

(iii) a circuit capable of receiving said respective electromagnetic signals and creating an electronic image associated with said image; and

(d) a fourth element comprising an electronic storage storing software that processes an image captured by said third element to correct, without user interaction, for image distortion in a portion of said image resulting from capturing said image from a non-planar surface having at least a portion not parallel to that of an image sensor in said third element,

where said processing separately processes individual portions of said text, so as to facilitate automated character recognition of text in a captured said image, and including the steps of:

- (i) converting said individual portions to grayscale;
- (ii) applying an edge detection filter to the grayscale-converted said individual portions; and
- (iii) thereafter individually rotating said individual portions to align with text respectively adjacent said individual portions.

12. The system of claim 11 where said first element includes a programmable electronic dictionary.

13. The system of claim 11 where said first element includes a spell checker.

14. The system of claim 11 where said image distortion being correctable by said fourth element includes image blur resulting from portions of said surface being located outside a depth of field of said third element.

15. The system of claim 11 where said programmable electronic dictionary includes a phonetic module that automatically recites an estimated pronunciation of a word to a user for verification.

16. The system of claim 11 where said third element includes a processor having software that instructs said third element to capture a test image of at least a portion of said

surface, analyze said test image, and based on said analysis, automatically, without user interaction, capture a second image that differs from said test image.

17. The system of claim 16 where said second image corrects for a skewed test image.

18. The system of claim 16 where said second image is more focused than said test image.

19. The system of claim 16 where said second image corrects for a distortion in said test image resulting from capturing text from a curved surface.

20. The system of claim 16 where said second image is a portion of said first image.

21-27 (canceled).

28. A cell phone comprising:

(a) a body portion containing a keypad, an audio receiver, and an audio transmitter;

(b) a digital camera in said body portion having an outwardly facing lens; and

(c) a processor capable of receiving an image containing a text sequence from said digital camera, distinguishing individual words in said sequence, and causing said audio transmitter to recite said individual words in said sequence; and

(d) storage storing a plurality of templates for identifying the layout format of text in an image captured by said digital camera.

29. The cell phone of claim 28 where at least one of said templates is in the layout format of a menu.

30. The cell phone of claim 28 where said processor is capable of correcting for at least one of a skew, blur, and distortion.

31. The cell phone of claim 28 where said processor includes a page prompt module that is capable of identifying a page number in the header or footer of an image, and prompting the audio device to recite a warning to a user if the apparatus receives images of pages of text in nonsequential order.

32. The cell phone of claim 28 where at least one of said templates is in the layout format of a newspaper.

33. The cell phone of claim 28 where one of said templates corresponds to a phone book.

34. The cell phone of claim 33 where said cell phone includes a button and said one of said templates instructs said processor to dial the phone number of a phone book entry being recited when the user presses said button.

**EVIDENCE APPENDIX:**

None.

**RELATED PROCEEDINGS APPENDIX:**

None.